

### Abstract of disclosure

A process chamber is placed in connection with a fluidized bed reactor for utilizing internal or external circulation of solid material or both in heat transfer purposes. Said process chamber is located inside the furnace of a circulating fluidized bed reactor adjacent to at least one of the furnace walls. The interior of said process chamber is provided with heat exchanger means for heat transfer from the solid material to heat transfer medium inside the heat exchanger means. The process chamber comprises a top closed barrier wall forming the roof of the process chamber, wherein the inlet of the solid material into the process chamber is arranged to the lower part of the wall of the process chamber and the outlet of the solid material out of the process chamber is arranged to the upper part of the wall of the process chamber. Prior to the said process chamber in the direction of the flow of said solid material an inlet chamber is provided inside the furnace of the circulating fluidized bed reactor for directing the solid material to the inlet of the process chamber.